DOCUMENT RESUME

ED 431 959 CE 078 991

TITLE	Workforce Development.
PUB DATE	1999-03-00
NOTE	31p.; In: Academy of Human Resource Development (AHRD) Conference Proceedings; see CE 078 963.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Adult Education; Comparative Analysis; Demonstration Programs; *Education Work Relationship; Educational Practices; *Employment Patterns; Employment Practices; Foreign Countries; Information Technology; Integrated Curriculum; Job Training; Labor Force; *Labor Force Development; Manufacturing Industry; *Outcomes of Education; Predictor Variables; Program Effectiveness; Rural Areas; Secondary Education; Success
IDENTIFIERS	Mexico; Netherlands; United States; Welfare Reform; *Welfare to Work Programs

ABSTRACT

This document contains four symposium papers on work force development. "Effects of Two Different Learning Paths on School-to-Work Transition" (Esther Van Der Schoot) discusses a Dutch study documenting that the following items make a difference in the school-to-work transition: learning path, curriculum characteristics, individual characteristics, organizational factors, and labor market factors. "Predictors of Success in Welfare-to-Work Training for the Information Technology Workforce" (Albert K. Wiswell, Margaret G. McCrudden) examines the extent to which various assessments conducted at the time of entry into a welfare-to-work demonstration program were able to predict participants' success in obtaining an information technology job. "Workforce Preparation in a Rural Context: A Curriculum Integration Intervention" (Gene L. Roth) reports on a 3-year project that was funded by a state board of education to help integrate science and applied agriculture in four rural school systems. "Human Resource Related Characteristics in Selected Small Manufacturing Companies in Mexico" (William R. Venable), which is based on interviews with executives from 31 selected Mexican companies, concludes that, in Mexico, training activities focus on employee relations more than on employee development and high-performance work practices are rare. (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 431 959

27 **Workforce Development**

Chair: Baiyin Yang, University of Idaho

27-1 Effects of two different learning paths on school-to-work transition

Esther Van Der Schoot, University of Twente, The Netherlands

27-2 Predictors of Success in Welfare-to-Work Training for the Information Technology Workforce

Albert K. Wiswell, Virginia Polytechnic Institute and State University

Margaret G. McCrudden, Virginia Polytechnic Institute and State University

27-3 Workforce Preparation in a Rural Context: A Curriculum Integration Intervention

Gene L. Roth, Northern Illinois University

27-4 Human Resource Related Characteristics in Selected Small Manufacturing Companies in Mexico

William R. Venable, Oklahoma State University

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

E Van Der Schoot
A Wiswell
G Roth W Venable

2A

BEST COPY AVAILABLE

CE 078 991

Effects of Two Different Learning Paths on School-To-Work Transition

Esther van der schoot
University of Twente

This study examines the relationship between curriculum characteristics and school-to-work transition of two learning paths in nursing and healthcare, namely: apprenticeship system and full-time senior and higher vocational education. A partly structured questionnaire has been used for interviews with employers, educational coordinators, experts, and graduates. Data have been analyzed by way of coding schemes, ATLASti and SPSS. Data analyses show that the path of learning makes a difference in school-to-work transition. Curriculum characteristics, as well as individual characteristics, organizational factors, and labor market factors have been important too in school-to-work transition.

Keywords: School-To-Work Transition, Curriculum, The Netherlands

The linkages between educational programs on the one hand and developments in the workplace on the other hand are less optimal than needed (Finch, et al., 1997). School-to-work transition is hard to accomplish, transfer tends to be highly specific and it needs to be guided, it rarely occurs spontaneously (Brown, 1995). In the Netherlands there are two different learning paths in vocational education and training, namely: apprenticeship system and full-time vocational education. Since the eighties there is a revaluation of the apprenticeship system. It is still not clear if the apprenticeship system will be the most suitable path of learning with regard to school-to-work transition (Streumer & Van der Klink, 1997). There is also talk of a shift towards the need of more transparent educational programs (Streumer, 1997) and educational programs which combine domain-specific qualifications with generic, broadly applicable qualifications (Nijhof & Streumer, 1994; Nieuwenhuis & Onstenk, 1994).

Public healthcare is growing very fast partly by demographic changes, causing a strong need for well-educated staff. A national qualification structure for nursing and healthcare educational programs has been introduced in august 1997, in which accent was on more broadness of educational programs to meet the above mentioned industry needs. Now students of the apprenticeship system and full-time vocational education have been educated along different learning paths towards the same attainment targets of the new introduced national qualification structure. In this study the expectation is that is does matter along which learning path a graduate makes his/her entrance at the labor market in nursing and healthcare.

There are many studies regarding the returns and effects of vocational education (Nijhof, 1998) and school-to-work research studies (Finch, 1996). The influence of different learning paths and the influence of curriculum variables on school-to-work transition has hardly been discussed yet. Research concerning the relation between curriculum characteristics and school-to-work transition has focused on the practical work components of educational programs (Nieuwenhuis & Onstenk, 1994; Bolhuis-Poortvliet & Snoek, 1996). In this studies the conditions for practical work situations seem to be important. There is also research into the effects of modular educational systems (Raffe, 1994; Meesterberends-Harms, 1994). It seems that the effects of modular educational systems can work the other-way-around with respect to school-to-work transition. Finally research after transfer of training and transitional skills have also been conducted (Moerkamp, 1996). In this study the question was posed if any transition at all occurred. Surveyed research Nijhof (1998) yielded a research model for connecting curriculum characteristics and labor market perspectives which is partly similar to the model of Baldwin & Ford (1988).

This input-process-output model contains important elements but it has no empirical validation yet with regard to school-to-work transition in the sector of nursing and healthcare. It also contains too many variables for the purpose of this study.

In this study the apprenticeship system will be compared with full-time senior and higher vocational education in nursing and healthcare. It would not be realistic not to take other variables in account as well. So it is stressed that individual characteristics of graduates, organizational factors (HRD) and factors stemming from the labor market can be significant too in answering the following research questions.

Copyright © 1999 Esther van der shoot

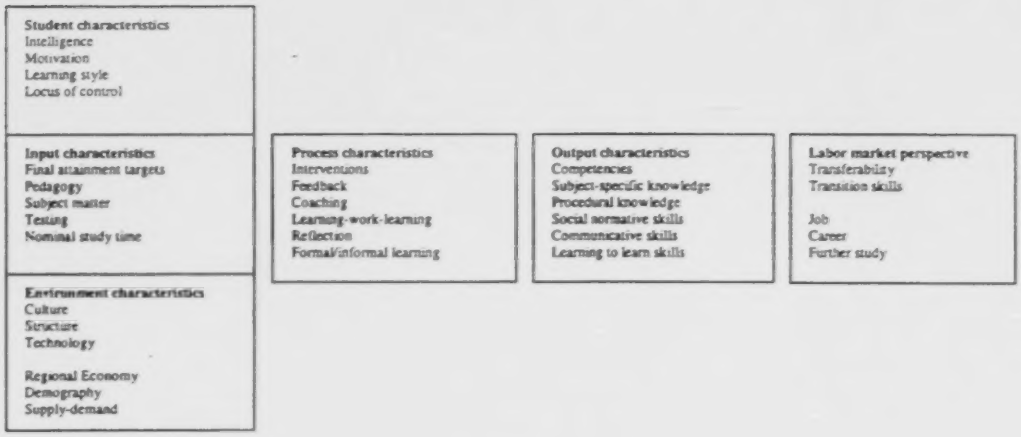

Figure 1. Research model for connecting curriculum characteristics and labor market perspectives, Nijhof (1998).

Research questions

1. Do graduates of the apprenticeship system have the same school-to-work transition* as graduates of full-time senior and higher vocational education in nursing and healthcare?
2. Which curriculum** variables do make a difference in the school-to-work transition of graduates from the apprenticeship system and full-time senior and higher vocational education in nursing and healthcare?
3. Which individual characteristics of graduates, organizational factors (HRD), and factors stemming from the labor market do make a difference in the school-to-work transition of graduates from the apprenticeship system and full-time senior and higher vocational education in nursing and healthcare?

* school-to-work transition: obtaining a job actually trained for, which belongs to a set of related jobs, which may be expected to require more or less different skills

** curriculum: implemented learning path

Methods

An embedded multiple-case design has been selected as the most suitable research method for this study. Such a design takes full account of the many variables/aspects that can be distinguished. As it is not possible to control events in the field of research and the application of methods can not be seen apart from the context. An embedded multiple-case design seemed most applicable (Yin, 1993; 1994). As mentioned before little qualitative research related to curriculum characteristics and school-to-work transition has been done yet (Streumer, 1997). That's why there has been chosen for a multiple-case study to get sight on relevant variables, which will result in a theoretical framework. In order to conduct a survey in a next phase of the study.

Participants

In an explorative phase of study it is important to get sight on different points of view. For this reason four groups of respondents have been selected, namely: employers, educational coordinators, experts, and graduates. Respondents have been selected by way of a combination of a selective selection and the snowball method (Baarda, De Goede, & Teunissen, 1995). The population from which they have been selected consists of participants related to two different learning paths of the educational nursing and healthcare system in the eastern part of the Netherlands. Respondents have been equally spread over the various educational programs. It was essential that graduates took their certificate at least one year ago.

In total 46 respondents (32 women and 14 men) have participated in this study. The *employers* consists of 8 respondents (=resp.). The *educational coordinators* consists of 11 resp. subdivided in: full-time senior vocational

nursing education (2 resp.); part-time and full-time senior vocational healthcare education (3 resp.); full-time higher vocational nursing education (2 resp.); nursing education of the apprenticeship system (2 resp.); and healthcare education of the apprenticeship system (2 resp.). The *experts* consists of 4 resp. Finally the *graduates* consists of 23 resp. subdivided in: full-time senior vocational nursing education (5 resp.); full-time vocational healthcare education (3 resp.); full-time higher vocational nursing education (5 resp.); nursing education of the apprenticeship system (6 resp.); and healthcare education of the apprenticeship system (4 resp.).

Instrument

A half-structured interview questionnaire has been developed on bases of theory, empirical research and a pilot study. The questionnaire (33 questions) contained five groups of variables, namely:

- Curriculum characteristics (16 questions), an example: "Does a modular educational system contribute to the connection to the demand of the labor market? Why yes/why not..."
- Individual characteristics of graduates (6 questions), an example: "Do graduates have sufficient capacities for functioning in their job? Why yes/why not...
- Organizational factors (2 questions), an example: "What are for employers important selection criteria in hiring their staff? Why...
- Labor market factors (7 questions), an example: "Are graduates flexible put to work in public healthcare organizations? Why yes/why not...
- School-to-work characteristics (2 questions), an example: "Do employees in public healthcare organizations move flexible at the labor market? Why yes/why not...

The four groups of participants have got the same half-structured interview questionnaire. For practical reasons graduates have got sometimes slightly different formulations.

Procedure

The interview round started. The length of an interview varied from 30 to 60 minutes, by the exception of the interviews of the graduates, which were interviewed telephonically during 15 to 30 minutes for practical reasons. All face-to-face interviews were taped and telephonic interviews have been worked out immediately. In case of unclearities the same explanations/examples for all respondents have been used.

Parallel to the interview round a coding scheme has been developed too. Beginning with a starting-list (Miles & Huberman, 1994) of core labels. Dimensions have been worked out from the core labels. At last loadings have been created on base of hypotheses (Baarda, De Goede, & Teunissen, 1995) and the interview protocols according to the phenomenographical point of view (Marton & Booth, 1997).

- The core label *curriculum variables* has been subdivided in the following dimensions: curriculum structure, practical work, attainment contents, attainment targets, educational method, educational approach, educational length, and examination;
- The core label *individual characteristics* has been subdivided in the following dimensions: ability, gender, motivation, and self-efficacy;
- The core label *organizational factors* has been subdivided in the following dimensions: working conditions, HRD policy, recruitment policy and selection criteria;
- The core label *labor market factors* has been subdivided in the following dimensions: labor market situation, substitution, and superseding.;
- The core label *school-to-work transition* has been subdivided in the following dimensions: future perspectives, and present school-to-work situation. For covering the whole concept of school-to-work transition a component of the dimension substitution, namely flexible available, has also been used for analyzing the data.

All protocols have been analyzed according to the developed coding scheme with the aid of ATLASti. The inter-subjectivity rate will be computed in the near future. In ATLASti theoretical frameworks have been built for variables (independent variables: curriculum, individual, organizational, and labor market variables) expected to have a positive as well as a negative relationship with school-to-work characteristics (dependent variable). In SPSS

these theoretical frameworks have been subject to statistical analyses (cross-tabs). Most questions in the questionnaire consist of a no, probably no, no opinion, probably yes, and a yes part (ordinal variables) and an explaining part (nominal dichotomy variables) that's why different statistics have been computed (Fisher Exact and ϕ for the nominal variables. Fisher Exact has been the most suitable statistic, therefore ϕ will only be used to show the direction of possible connections. Spearman Correlation has been used for the ordinal variables).

For statistical reasons the respondents have been split in two groups, namely: respondents related to the apprenticeship system (8 employers, 6 educational coordinators, 4 experts, and 13 graduates), and respondents related to full-time vocational education (8 employers, 7 educational coordinators, 4 experts, and 13 graduates). The group of respondents related to the apprenticeship system consists of 28 respondents (20 women and 8 men) and the group of respondents related to full-time vocational education consists of 32 respondents (22 women and 10 men). In total there are 46 respondents, however employers, educational coordinators (secondary vocation healthcare education) and experts can be spread over both groups for their assessment.

Results and Discussion

Referring to *research question 1:* "Do graduates of the apprenticeship system have the same school-to-work transition as graduates of full-time senior/higher vocational education?"

Results show that the learning path makes a difference in relation to school-to-work transition. Especially for graduates of full-time secondary nursing and healthcare education, 75% find themselves not capable enough for start working at the labor market. As a graduate pointed it: *"There was not enough time to learn skills in practice during the two practical works of each eight weeks. Lack of time causes a disconnection between the educational program and the work field."* In most of the times they simply are not succeeding in finding a job and have to start an apprenticeship program for being considered. Legislation of the government plays an important role in this with regard to reserved actions (Ministry of Healthcare, Welfare, And Sports, 1996). In the new qualification structure, implemented in 1997, educational programs are better prepared for contenting these requirements.

Results show too that especially graduates of full-time higher vocational education have a profound theoretical knowledge (stated by 72 % of all respondents). In contrast to graduates of the apprenticeship system who are immediately available but don't have a profound theoretical knowledge (stated by 80% of all respondents). This causes a different start at the labor market. As a graduate of full-time higher vocational nursing education mentioned: *"At the beginning more time is needed for reaching self-employment. You have to worm in an existing situation which costs time."* In contrast, a graduate of the nursing apprenticeship mentioned: *"I function perfect at my own department. Other departments function differently and there I have to start all over."* The apprenticeship system was rule in nursing and healthcare. The exception was full-time vocational education. As an expert posed: *"Now you can see different appreciation of employers for the two learning paths partly caused by legislation of the government. It is more wanted that people look more from a distance and with an analytical view to situations in public healthcare. As graduates of full-time higher vocational nursing education do."*

Employers' viewpoint about a well functioning staff seems to be important. Do they prefer working with own educated staff or do they prefer working with full-time more broad educated staff. Estimation of costs has to be taking in account as well.

Referring to *research question 2:* Which curriculum variables do make a difference in the school-to-work transition of graduates from the apprenticeship system and full-time senior and higher vocational education in nursing and healthcare?"

Results show that there are curriculum variables, which seem to make a difference in relation to school-to-work transition. However, for now it will be hard to set up precisely all curriculum variables which really make a difference. Firstly this has something to do with the many variables taken into consideration in this study. Besides curriculum variables, individual characteristics, organizational factors and labor market factors have been taken in account as well. Then the level of abstraction plays a role. Asking a respondent, *"Do graduates who have had sufficient time for practice during courses function differently from graduates who have had less time for practice?,"* will not cause any problems. However when trying to ask a question as, *"Do graduates who have had course centered education function differently from graduates who have had course exceeding education?"* one will face a lot of difficulties. Respondents simply did not really know the answer and are not capable in observing differences in daily practice. Finally this study brings out its own limitations, namely relatively small groups of

respondents. Generalization will only be possible for the vocational education and training system in nursing and healthcare in the eastern part of the Netherlands.

After taken these limitations into consideration there have been results too. Both significant positive and negative relations of curriculum variables in relation to school-to-work transition will be presented in table 1 and 2.

Table 1
Curriculum Characteristics Positive Related to School-To-Work Transition

	Substitution flexible: Available 2		Substitution flexible: Available 3		School-to-work: Near future 1		School-to-work: Near future 2	
	Apprent.*	FT**	Apprent	FT	Apprent	FT	Apprent	FT
Curriculum variables (nominal)								
Curriculum structure – Connection 2								-.110*** 31.3****
Practical work – Influence 1	-.011 25.0	-.068 9.4		-.078 15.6			-.023 42.9	
Practical work – Influence 2	.012 12.0			.022 40.6		.062 18.8	-.023 42.9	
Attainment contents – Connection 4	.008 39.9				-.055 10.7			
Educational approach theory -Practice 1					.010 42.9		-.038 28.6	
Educational approach theory -Practice 3					-.004 0.0		.104 21.4	
Educational approach centered/exceeding 2							.052 42.9	.068 40.6
Examination 1							.111 50.0	
Examination 2	-.089 3.6				.089 14.3			.068 25.0

Curriculum variables (ordinal)	Substitution flexible available		School-to-work near future	
	Apprenticeship system	FT education	Apprenticeship system	FT education
Attainment contents connection	.013*****	32.1******	-.037	35.7
Practical work influence			-.098	75.0
Educational approach centered/exceeding			.018	17.9

* Apprent: Respondents related to the apprenticeship system
** FT: Respondents related to the full-time vocational education
*** -.110: Fisher Exact significance 1-sided and α is .10
**** 31.3: Percentage of respondents who scored on both variables positively
*****.013: Spearman Correlation significance 1-sided and α is .10
****** 32.1: Percentage of respondents who scored on both variables positively

Nominal as well as ordinal variables are constant in the direction of the connection. The structure of the curriculum matters, as an employer declared: *"Graduates of the full-time education are theoretical more broadly what contributes in contacts with doctors and reporting skills. In the apprenticeship system is often talk of second chance education which we don't prefer."* Practical works do have an influence too, especially in getting a job. A

graduate of the apprenticeship nursing education pointed: *"This hospital really attention one's functioning at the work place."* In contrary an expert said: *"Employers judge themselves if an applicant is likely to the job."* Half of the employers prefer own-educated staff. At the start graduates of both learning paths function differently. However an expert marked: *"Graduates of both learning paths reach in a couple of years the same self-employment."* Right after graduating there can be a discrepancy between what graduates of full-time higher vocational education are capable of and what employers expected them to do. As an educational coordinator noted: *"Work field can have a different view on what they need then educational institutions. Probably this is caused by their apprenticeship background." "Looking at the educational approach it is really a question if organizations are that interested in educational programs. Educational results count in practice,"* as an expert observed.

There is no connection between the direction of the relationship of nominal variables and ordinal variables. Possibly declared by the fact that loadings have been created on phenomenographical point of view. Remarkable is that 20% of the employers do not prefer graduates of the apprenticeship system for reason of second chance education. Another important factor is the relation between educational institutions and work field. A graduate said it as follows:*" There is conflicts between the apprenticeship system and higher vocational education. The work field stands in the middle or is taken a side."*

With regard to practical work there is a difference between the coaching for full-time vocational education students and students of the apprenticeship system. An expert mentioned: *"Organizations paying the education for the apprenticeship system it is in their benefit to coach their students."*

Table 2
Curriculum Characteristics Negative Related to School-To-Work Transition

	Substitution flexible: Available 1		School-to-work: Labor market 4	
	Apprenticeship	Full-time	Apprenticeship	Full-time
Curriculum variables (nominal)				
Curriculum structure: Connection 3			.038 10.7	.034 9.4
Attainment contents: Connection 1			-.077 14.3	
Attainment contents: Connection 2		-.001 3.1	.043 14.3	
Attainment contents: Connection 3	.010 25.0	.011 15.6		
Attainment contents: External influence 1	.039 13.0	.056 31.3		
Educational length 2	.048 25.9	.003 16.7		
Practical work: Coaching 3				.083 6.3
Practical work: Coaching 4			-.065 0.0	

	Substitution flexible available		School-to-work labor market	
	Apprentice	Full-time	Apprentice	Full-time
Curriculum variables (ordinal)				
Attainment contents connection				-.066 21.9
Attainment contents influence				-.057 9.4

Referring to *research question 3:*"Which individual characteristics, organizational factors (HRD), and factors stemming from the labor market do make a difference in school-to-work transition of graduates from the apprenticeship system and full-time senior and higher vocational education in nursing and healthcare?"

Results show that there are factors, which make a difference in school-to-work transition. Both significant positive and negative relations of individual characteristics, organizational factors, and labor market factors in relation to school-to-work transition will be presented in table 3 and 4.

Nominal and ordinal variables are not constant in the direction of the connection. The table shows that men are more career oriented then women and have a better position at the labor market. Very often students choose a learning path after their own attitude and all want to start working after graduating because of their motivation in helping other people. Graduates with full-time labor contracts have a more flexible attitude then their part-time colleagues. Probably due to family care. Graduates of the apprenticeship have a lead at graduates of full-time education when they start working for they have already a job at the start of their education. It depends on the recruitment policy of each organization if graduates of the apprenticeship system have the same opportunities in getting a job as graduates of full-time education.

As far as it fits the case nominal and ordinal variables are not constant in the direction of the connection. The table shows that women are less career oriented then men. Further organizations want staff continuity and graduates who match with their culture. As long as the supply is greater then the demand organizations can pick who they want. Government educational policy does not always connect with the situation in practice.

Another crucial question: *"Are graduates flexible available at the labor market?"* Looking at the future it would be preferable if graduates are flexible put to work with regard to mergers of organizations and increasing complexity of healthcare. However family care, less motivation for career opportunities, option for a specific direction, and a relatively bad situation at the labor market in the eastern part of the Netherlands keep people stuck at their place. As an educational coordinator noted: *"It would be preferable if graduates move more flexible at the labor market. However, graduates are not willing and organizations want to know who is on their pay-list."*

Recapitulating there is a difference in school-to-work transition between the two different learning paths. There are curriculum variables which make a difference in the transition. Until now we know that the curriculum structure, the educational approach, practical work, educational length, and attainment contents do make a difference. Individual characteristics (ability, gender, motivation, and self-efficacy), organizational factors (work conditions, HRD, selection criteria, and recruitment policy), and labor market factors (future, substitution, and superseding) do make a difference, too.

The following theoretical framework can be constructed after the results of this study and will be tested in the coming survey.

Table 3
Individual Characteristics, Organizational Factors, and Labor Market Factors Positive Related to School-To-Work Transition

	Substitution flexible: Available 2		Substitution flexible: Available 3		School-to-work: Near future 1		School-to-work: Near future 2	
	Apprentice	FT	Apprentice	FT	Apprentice	FT	Apprentice	FT
Individual characteristics (nominal)								
Ability 1				-.006		.030		.086
				28.1		40.6		46.9
Gender 4						.058		
						9.4		
Motivation choosing learning path 5				-.014				
				3.1				
Motivation searching work 1							-.082	
							32.1	
Self-efficacy 1					-.040			
					21.4			
Organizational factors (nominal)								
Work conditions 2					.081			
					25.0			
Selection criteria 1				-.035	.076	.042		
				12.5	35.7	28.1		
Selection criteria 6	-.067							
	0.0							
Selection criteria 7				-.083	-.040			
				18.8	21.4			
Labor market factors (nominal)								
Labor market: Future 2						-.031		
						21.9		
Substitution flexible: Available 2						.062		
						21.9		
Substitution flexible: Available 3						-.029		
						9.4		
Substitution job-after-function 2					-.027			
					10.7			

	Substitution flexible available		School-to-work near future	
	Apprentice	Full-time	Apprentice	Full-time
Individual characteristics (ordinal)				
		-.013	-.098	
Ability		18.8	46.4	
Motivation choosing learning path		.002		
		40.6		
Labor market factors (ordinal)				
Substitution flexible available				-.042
				18.8

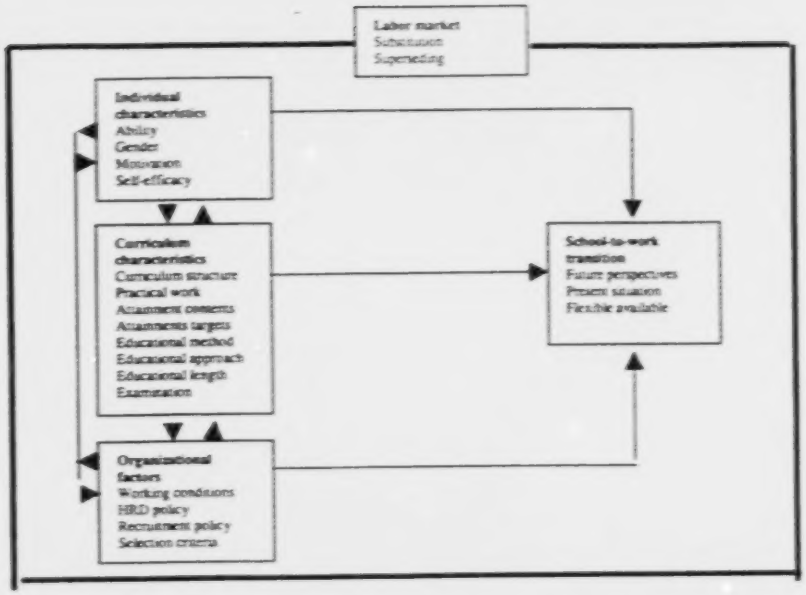

Figure 2. Curriculum characteristics and school-to-work transition.

Table 4
Individual Characteristics, Organizational Factors, and Labor Market Factors Negative Related to School-To-Work Transition

	Substitution Flexible: Available 1		School-to-work: Near future 3		School-to-work: Labor market 1		School-to-work: Labor market 3		School-to-work: Labor market 4	
	Appren	FT	Appren	FT	Appren	FT	Appren	FT	Appren	FT
Individual characteristics (nominal)										
Gender 3						.068 15.6				
Organizational factors (nominal)										
HRD 4				-.101 0.0		.085 9.4				
Recruitment policy 4	.015 50.0	.056 31.3								
Selection criteria 8								.087 17.9		
Labor market factors (nominal)										
Labor market fit 2									-.013 3.6	-.030 0.0
Labor market future 1		.033 9.4								
Labor market future 3									.082 10.7	
Substitution job-after-function 3	.019 35.7									
Substitution volunteers 2		.033 9.4								
Superseding 1										.030 18.8
Superseding 3	.044 17.9									

	Substitution flexible available		School-to-work labor market	
Individual Characteristics (ordinal)	Apprenticeship	FT	Apprenticeship	FT
Ability		-.013 0.0		-.081 9.4
Self-efficacy	.022 7.1			
Labor market factors (ordinal)				
Labor market future		.091 9.4		

References

Baarda, D.B., De Goede, M.P.M., & Teunissen, J. (1995). Qualitative research. Houten: Stenford Kroese.

Baldwin, T.T., & Ford, J.K. (1988). Transfer of training: A review and directions for future research. Personnel Psychology, 41, 63-105.

Bolhuis-Poortvliet, van G.A., & Snoek, J.P.A. (1996). Reflections at practical work experiences. Utrecht: Pedagogic Center.

Brown, A. (1995). Designing effective learning programs for the development of a broad occupational competence. Surrey: Department of Educational Studies, University of Surrey.

Finch, C.R. (1996). School-to-work transition in the United States. Paper presented at the ECER of 1996.

Finch, C.R., Mulder, M., Attwell, G., Rauner, F., & Streumer, J. (1997). International comparisons of school-to-work transition. EERA Bulletin, 2, 3-15.

Marton, F, & Booth, S. (1997). Learning and awareness. Mahwah: Lawrence Erlbaum.

Meesterberends-Harms, T. (1994). Modular instruction, student investment and school output. In: W.J. Nijhof & J.N. Streumer (Eds.), Flexibility in Vocational Education and Training. Utrecht: Lemma.

Miles, M.B., & Huberman, M. (1994). Qualitative data analysis: An expanded sourcebook (2nd ed.). London: Sage.

Ministry of Healthcare, Welfare, and Sports (1996). Under reservation: Information about the qualification regulation and reserved actions. Rijswijk: Ministry of Healthcare, Welfare, and Sports.

Moerkamp, T. (1996). Transitional skills and transfer in professional careers. Amsterdam: University of Amsterdam, SCO Kohnstamm Institute.

Nieuwenhuis, L., & Onstenk, J. (1994). Working and learning in education and profession: The workplace as a powerful learning environment. Comenius, 14, 198-219.

Nijhof, W.J., & Streumer, J.N. (1994). Introduction. In: W.J. Nijhof & J.N. Streumer (Eds.), Flexibility in Vocational Education and Training. Utrecht: Lemma.

Nijhof, W.J. (1998). Curriculum Characteristics and Labour-Market Perspectives. In H. Heijke & L. Borghans (Eds.), Towards a Transparent Labor Market for Educational Decisions. Brookfield: Ashgate.

Raffe, D. (1994). The new flexibility in vocational education. In: W.J. Nijhof & J.N. Streumer (Eds.), Flexibility in vocational education and training. Utrecht: Lemma.

Streumer, J.N. (1997). School-to-work transition in the Netherlands. International Journal of Vocational Education and Training, 5(1), 26-44.

Streumer, J.N., & Van der Klink, M.R. (1997). A broad qualification by learning at the workplace? In: J.H.J. de Jong & W.C.L. Robroek (Eds.), Learning and working in healthcare education. Houten/Diegem: Bohn Stafleu Van Loghum.

Yin, R.K. (1993). Applications of case study research. United States of America: Sage Publications.

Yin, R.K. (1994). Case study research: Design and methods (2nd ed.). United States of America: Sage.

Predictors of Success in Welfare-to-Work Training for the Information Technology Workforce

Albert K. Wiswell
Virginia Tech

Margaret G. McCrudden
Virginia Tech

A major challenge in welfare-to-work training programs is preparing welfare recipients for entry-level jobs with long term career paths at wage levels that allow real self-sufficiency. The current shortage of workers in information technology (IT) fields not only calls for innovative solutions but presents an opportunity for entry into the workforce. A demonstration program described here reports the extent to which various assessments prior to training could predict success in securing employment in IT positions.

Keyword: Information Technology, Welfare Reform, Workforce Training

On August 22, 1996 President Clinton signed into law the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (The Welfare Reform Act) which radically reformed the nation's welfare system. This law requires that the majority of individuals and their families receiving public assistance move from welfare into full time employment. It has been two years since this legislation was passed into law, and we are seeing positive results (ASTD, 1998). The Department of Labor reports that the number of people on welfare has dropped from 12.2 million to 8.9 million, a 3.3 million decrease. This dramatic change is the result of progressive initiatives that have begun across the country to maximize the opportunity to train this workforce to prepare them for employment opportunities in the public and private sector. With the reality of a tight labor market, and the need to create a diverse and skilled workforce, welfare reform creates an opportunity for businesses to assess their recruiting and training efforts, and to look at a viable, non-traditional labor pool to fill their labor needs.

As Human Resource professionals look to the future of their organizations, they see a demand for a workforce that is diverse, one that is reflective of the communities in which their businesses operate. As businesses experience a shortage of workers, the welfare reform act acts as a catalyst for organizations to consider the recruitment and training of the pool of diverse workers within the welfare system. While many existing training programs address the skills necessary to place these individuals into entry-level jobs, the most successful programs also address strategies for the individuals to grow their jobs into meaningful and lucrative careers (Friedlander & Burtless, 1995). According to the Welfare to Work Partnership (1997), businesses that hire former welfare recipients have experienced higher retention, lower turnover, and have reaped the benefits of hiring workers that are trainable and ready to work. Tax incentive programs are in place to assist businesses that are interested in filling their position vacancies with individuals from the current welfare pool.

The Workforce Investment Act of 1998 addresses the country's need for a more deliberate commitment on the part of the government to support the training demands of our society (Micco, 1998). This Act compliments the Welfare Reform Act because it shifts funds into the hands of local government to support the training efforts of local workforce investment. In the case of welfare reform, it provides an additional financial incentive to businesses to tap the pool of welfare recipients for training in preparation for their move from welfare to work.

The Workforce Development Challenge

Due to the dynamics of technological advances, businesses are challenged by the speed at which change takes place in the workplace. Organizations can benefit from developing and participating in training programs that prepare welfare recipients to operate more skillfully, and therefore more effectively, to enhance productivity in response to the reality of a highly competitive global economy (Riccio & Orenstein, 1996).

The IT Workforce Shortage The nations pervasive problem with unfilled jobs in information technology (IT) areas challenges educators and businesses alike to develop innovative solutions. According to a national survey

Copyright © 1999 Alkbert K. Wiswell and Margaret McCrudden

sponsored by the Information Technology Association of America (ITAA, 1998), almost 350,00 IT job openings were identified in companies with over 100 employees. These openings were present in every geographical region of the country and existed across many specific job areas.

A regional survey in the northern Virginia area making up part of the metropolitan Washington D.C. area placed the number of unfilled high technology jobs at 20,000 and growing. Of these 20,000 job openings, half were identified as "low-end" technology jobs, not requiring a college degree or extensive experience. Many different types of programs have been started in the last two years to prepare individuals with the potential to succeed in entry level positions which would provide an introduction to a viable career in the IT field.

A Brief Overview of TekAid TekAid is a unique partnership that was designed to bring education, industry and human services together to identify, train and place selected individuals on public assistance. The program delivery part of the partnership consisted of teams from Virginia Tech, Northern Virginia Community College, and from Mitretek Systems, Inc., a company largely devoted to solving technology transfer problems. Program funding was provided by the Fairfax County (Virginia) Department of Family Services and the Northern Virginia Regional Partnership, a state entity charged with addressing the IT employment demand in northern Virginia.

The program developed was an intense training program to prepare entry level technologists for employment in the IT field. Industry partners were involved in identifying the key components of the screening and the training that would identify and prepare specific candidates as most likely to succeed in this endeavor. A fourteen week training program was developed to train participants in computer programming (mostly COBOL) in order to qualify them for entry level programming positions in companies conducting Year 2000 date remediation work. The program consisted of a total of 16 credits of coursework, tutorial assistance, supplemental training, employability training, and job placement assistance. It is this program that is the focus of this study.

Problem Statement

Two important issues regarding today's workforce have been highlighted, the IT workforce job shortage and the initiatives for job training mandated by recent welfare-to work legislation. Industry is faced with having to tap heretofore unused resources, new pools of workers for IT jobs that may not have the necessary skill sets. Questions therefore arise about what form that training may take and who is most likely to succeed. Human service agencies are faced with a mandate to help clients secure permanent jobs before their benefit eligibility expires, jobs with paid benefits and salaries sufficient to sustain a family. Having the means to direct clients towards appropriate jobs and training opportunities that can result in success is a crucial part of this mandate.

Research Questions

This research addresses the following question:

What is the predictive value of the following variables on successful completion of an information technology training program directed to a group of selected welfare recipients:

1. Basic mathematics skills;
2. Computer programming aptitude;
3. Assessment of potential through personal interviews;
4. Prior experience with computer technology.

Method

All data measuring the independent variables mentioned above were collected in June of 1998. Math skills were assessed using the mathematics section of the Wonderlic Basic Skills test. Computer programming aptitude was measured using the Computer Operator Test Battery. Prior experience with computer technology was assessed using a demographic questionnaire.

These data were collected from 120 clients who were eligible for the program and who had expressed interest based on a brief presentation of the program. Based on the preliminary data, 70 clients were invited to a

personal interview. The 30-45 minute interviews consisted of the candidate and two interviewers. After the interview, the interviewers jointly completed a feedback form, reporting their impression of the potential of the candidate to participate in the program. They also completed a rating sheet consisting of items rated on a ten point scale. These items included assessment of the general aptitude for technology work and overall estimate of the likelihood of success in the program.

Based on these interviews, acceptance into the program was offered to 51 candidates. When the training started, a total of 49 candidates enrolled. After the first half of the fourteen week program, 40 students remained. The formal training ended October 30, 1998. Since the vast majority of participants were not employed at the end of the program, an intensive effort was made for the following two months to provide job placement assistance. Thus, the design allowed two different measures of success, (1) completion of coursework, measured by grades received (0-4, representing no credit, D, C, B, and A) and (2) securing of full time employment in a technology related job.

Analysis consisted of testing the predictive value of the independent variables though multiple regression. Since there is no current theoretical model of how the predictors may be related, and the primary aim of the research is to maximize predictability of success, a step-wise regression procedure was used. In addition, analysis of variance and T tests were used to examine differences between groups and Pearson correlations were calculated to examine relationships between individual variables of interest.

Results

As shown in Table 1, of the 49 participants who began the program, 35 successfully completed all training (defined as receiving the total 16 credits of coursework). Of these, nine were not employed in full time technology related jobs within two months following program graduation. In five of these cases, this was due to a combination of lack of English proficiency and lack of a permanent work visa. In four of the nine cases, a combination of limited technology skills, poor interviewing behavior, and low motivation contributed to inability to secure employment.

Table 1. Program Participant Outcomes

	Completed Program	Did Not Complete	*Total*
Full Time Technology employment	26	6	*32*
No Technology Employment	9	8	*17*
Total	*35*	*14*	*49*

Of the 14 participants who did not successfully complete the program, six received full time job offers in the last two weeks of the program and dropped out in order to accept these positions. The other eight terminated participation approximately midway in the program, for the following reasons:

- Problem pregnancy (2)
- Chronic illness (2)
- Lack of academic progress (2)
- Moved out of area (1)
- Substance abuse (1)

Those participants securing full time employment were receiving annual salary levels ranging from $19.5K to $60K, with a median of approximately $23K. However, due to prevailing hiring practices, most were in temporary probationary (for three months) positions that did not provide standard benefits.

Analysis of variance and T-tests comparing completion groups (completers vs. non-completers) failed to detect any differences due to any pre-assessment variables. Likewise, analysis of variance and T tests comparing employment groups (employed vs. not employed) failed to detect any differences. Pre-assessment variables included mathematics skills, computer aptitude, general technical aptitude, overall likelihood of success, and prior experience with computers. As depicted in Table 2, Pearson correlations of the pre-assessment variables with program outcomes (in terms of the grades received in the courses) showed moderate relationships in some cases.

Table 2. Pre-assessment and Outcome Correlations

		Pre-assessment Measures				
		Wonderlic	COAB	Technical Aptitude	Overall Assessment	Prior Experience
Program Outcomes (Grades)	Intro to Computers	.066	.135	.321*	.111	.444*
	COBOL I	.125	.277**	.332*	.239	.526*
	COBOL II	-.005	.012	.145	.037	.366*

* p<.02 ** p<.05

The Wonderlic mathematics skill assessment was not related to any of the success measures. The COAB computer aptitude measure was moderately related to success in the first COBOL course, but not strongly enough to support its use as a primary predictor. Interviewer assessment of technical aptitude was related to success in the first two courses and prior experience was related to success in all courses. No regression models could be developed that explained a significant amount of outcome variance, due to the multicollinarity of the predictors.

Discussion

These predictors do not take into account all of the personal, social, economic, and emotional factors that also may have contributed to or hindered a candidate's success. To a great extent, the inability to identify meaningful predictors of success was a function of the overall success of the program. The program delivery model combined intensive training with intensive support. For example, during the first week, mathematics remediation was provided to all participants with weak math skills. This remediation was targeted to specific individual weaknesses identified through testing and was very successful in increasing skills for the weaker students. In addition, ongoing social services support was provided through a caseworker specifically assigned by the county to work with these participants to help overcome financial, transportation, and other obstacles potentially interfering with successful completion.

Job Placement A crucial discovery some weeks before program completion was the great difficulty that would be encountered in securing employment for graduates. Industry partners that had expressed need for IT employees six months previously either did not have positions open at the time, or were seeking to fill positions for which program graduates did not qualify. Perhaps due to the employment environment of the region in which many employers are in fact contractors for federal agencies, certain placement obstacles were insurmountable. About one-forth of the participants were immigrants, on political asylee status or other visa that did not provide permanent work status, nor did it allow minimal security clearances required by many employers. Also, some contractors' clients required personnel with bachelors degrees, even though they were not necessary to perform the job functions. An anticipated attraction of a potential $8500 tax credit that employers could receive for hiring program graduates was meaningless, at best, for the medium to large companies with positions to fill. The hiring managers were aware that those funds would not come directly to a project, and at the vice president or higher level, it was deemed insignificant compared to ensuring project success or having to terminate and rehire.

Another feature of the employment environment that created placement challenges was the practice of hiring new employees on a temp-to-perm probationary status through placement agencies. This establishes a procedure whereby recruiters are tasked with matching job descriptions provided them with resumes, which was not always a perfect match with program participants. To a large extent, similar procedure existed when internal human resources department were doing the job screening. Also, the promise of the availability of a great many entry level positions proved to be severely limited, especially in the Y2K remediation arena. Many jobs for COBOL programmers existed, but they required several to many years of experience.

These employment environment characteristics required a much greater than anticipated involvement by all project staff in job placement after formal program completion. Supplementary training was provided in specific areas that seemed to be in demand, such a web page design and advanced office applications. Intensive assistance was provided to tailor resumes to specific job openings, Practice with interviewing was provided and group interviews with recruiters were arranged. Also, effort was made to dispel the notion of many program participants that job offers would be coming to them with little effort on their part.

Limitations The extra efforts made to ensure successful program completion may have blocked any potential predictive effect of the pre-assessment measures. Also, a moderate degree of the selection process was based on those measures, which may have resulted in a restriction of potential variance. Also, this population was drawn from an affluent metropolitan area with somewhat unique demographics as welfare recipients, facing a somewhat unique employment environment. Results with populations in other geographic regions may be very different. Moreover, it is not known at this point what the long term employability patterns will be for program participants. While the program was designed to provide entry into a field that has potential career paths and development opportunities, the extent this capability was achieved can only be determined by a longer-term follow-up examination.

Potential Implications

The results of this research have limited value for making selection recommendations for training for similar and related populations of candidates for job training. Based on the data from this study, it is clear that a simple formula for predicting employment or program success for this population is not possible. Objective measures have as great, and as limited a role as more subjective assessments.

However, there are particular implications for staffing and recruiting personnel in the information technology field, who are finding it increasingly challenging to fill IT jobs with the typical pool of applicants. The typical hiring procedure in which a project of program manager decides staffing requirements based solely on task requirements, and recruiters (internal or external) are tasked with matching candidates to job descriptions may need to be examined. A closer involvement by the placement personnel with the hiring managers may be more successful in matching unused resources with unmet needs.

For example, a manager may determine that a project or program requires, say, two system analysts and five experienced programmers. On examination of the tasks involved, it might be discovered that half of the tasks are of a low level routine nature, such as testing. A different staffing pattern of the two system analysts, two programmers, and three or four programming assistants may be sufficient. This would not only save money in personnel costs but would provide resources to develop into positions requiring more expertise.

To fill what has been identified as a critical need to hire employees for the current IT shortage, businesses need to look at nontraditional methods to meet those demands. Legislation has been designed to support, encourage, and challenge the business community to recruit and train welfare recipients. The challenge for human resource professionals is the need to engage in strategic recruitment and training efforts to gain access to a new source of labor. This effort requires creative and innovative measures to address this opportunity. Partnerships between the public and private sector are an essential and valuable vehicle for identifying the potential candidates to hire from the public assistance sector.

References

Friedlander, D. & Burtless, G. (1995) *Five years after: The long-term effects of welfare-to-work programs.* New York: Russell Sage Foundation.

Information Technology Association of America (1998) Help Wanted 2: A Call for Collaborative Action for the New Millennium. https://www.itaa.org/transact/wfrptsub.htm

Micco, L. (1998) Clinton Signs Job Training Bill Promising 'One Stop Shopping'. http://www.shrm.org

American Society for Training and Development (1998) President Clinton Observes Welfare Reform's Two Year Anniversary. ASTD's Policy and Public Affairs Division. http://www.astd.org

Riccio, J. & Orenstein, A. (1996) Understanding best practices for operating welfare-to-work programs. *Evaluation Review* 20:1, 3-28.

The Welfare to Work Partnership (1997) http://www.welfaretowork.org/about.html

Workforce Preparation in a Rural Context: A Curriculum Integration Intervention

Gene L. Roth
Northern Illinois University

Considerable time and money have been expended at the Federal, state and local levels regarding workforce preparation in the United States. An approach that has received considerable attention in the last decade has been curriculum integration in the public schools. This paper describes a 3 year project that was funded by a state board of education. Four rural school systems participated in a project that featured the integration of science and applied agriculture.

Keywords: Rural Education, Workforce Preparation, Curriculum Integration

The transition from school to work for young adults is an important focus of federal and state funding in the United States (Stasz and Kaganoff, 1998; Orr, 1998). Part of this focus has included demonstration projects that feature curriculum integration interventions in public schools. This paper describes one such intervention that took place in a rural context. A vocational center was awarded a 3 year demonstration project funded by a state board of education in fiscal year 1995. The vocational center was owned and operated by eleven school districts. The curriculum integration project involved four member districts, and the four high schools represented approximately 800 students.

The following objectives guided the project planning, implementation and evaluation:

1. The project planned to improve math, science and agri-technical skills of 40-120 students (10th-12th grades) enrolled in agricultural career programs.
2. High schools students were expected to increase their abilities, knowledge, and interests in agricultural-business fields. This was to be accomplished by participating in an integrated program which incorporated on-site farm and agricultural projects, integrated applied academics, and university field experiences.
3. A usable structure for integrating math, science and agri-technical curricula was designed and implemented in the classroom by teachers based on knowledge, skills and strategies learned from staff development workshops.
4. Collaborative efforts between agriculture business/industry leaders, farmers, university faculty, students, parents and high school educators were used to build partnerships to promote scientific literacy in agricultural businesses.

Statement of the Problem

The current study was undertaken to empirically examine the perceptions of multiple stakeholders involved in a curricular intervention within rural schools. Understanding the ways in which students, administrators, teachers and counselors view an intervention in the rural context can address taken for granted assumptions that "one size fits all" with school to work policy issues. This study sought to bring attention to those factors unique to the rural context so that future researchers and practitioners might be better able to plan and implement school to work interventions.

Theoretical Framework: Workforce Preparation in a Rural Context

Generally speaking, little is known about workforce preparation issues in rural contexts. Workforce preparation, similar to other federally and state sponsored initiatives, have suffered from a lack of sustained inquiry about the unique problems of rural schools. Interventions envisioned at the federal level are often difficult to plan and implement in a full range of schools: rural, suburban, and urban (Roth, 1996). For several decades the research agenda for rural schools has been marginalized. National research agendas and their utility for serving rural issues and problems have been openly questioned by several educational researchers (DeYoung, 1987). These scholars

Copyright © 1999 Gene L. Roth

infer that the community based needs that are intertwined in the culture of rural schools often remain unserved by the massive quantitative studies of educational researchers in the United States.

Although schools in small towns and rural environments account for over one-third of the students in the United States, the nation's educational research agenda still allots rural schools a somewhat marginal status. A relatively minor amount of research has been conducted regarding rural schools, their students and teachers, and their learning environments (Federal Interagency Committee on Education, 1991). This dearth of research is noticeable in the urban bias of federal and state educational policies and actions (Roth, 1996).

DeYoung (1987) asserted that a shared understanding was held by scholars who have toiled in the area of rural education. This common core of beliefs depicts a lack of attention at state and national policy levels regarding the unique context of rural education:

- Rural education in the United States is viewed as an anomaly unbefitting of respect from educational theoreticians and researchers.
- Administrative, curricular, and staffing solutions that are frequently posed for urban and suburban situations may not offer utility for rural settings.
- Demographic, economic, and administrative variables of the rural context deserve ample attention from educational researchers and policy makers.

In light of the preceding observations, the framework for this study pertained to factors that influenced the planning and implementing of an intervention in rural schools. Perceptions were sought from various stakeholders regarding the unique elements of the rural context that influenced the intervention.

Research Questions: The Perceptions of Stakeholders

What were the perceptions of students, teachers, principals, and counselors in rural schools regarding a workforce preparation, curriculum integration intervention? Their perceptions were sought to identify factors that were pronounced in rural schools and that effected the intervention. The following questions guided the study:

- How does the rural context effect the dynamics of teacher interactions across disparate disciplines (including team teaching)?
- How do daily schedules of rural teachers effect planning and implementing an intervention?
- How does course scheduling within rural schools effect planning and implementing an intervention?
- How do rural school and community relationships effect authentic instruction?

An Overview of Project Methods

Merriam (1991) outlined the characteristics of different types of systemic inquiry, and her discussion will be used here to explain why both qualitative and quantitative methods were used in this project. "Non-experimental (or, as it is often called, descriptive) research is undertaken when description and explanation (rather than prediction based on cause and effect) are sought, when it is not possible or feasible to manipulate the potential causes of behavior, and when variables are not easily identified or are too embedded in the phenomenon to be extracted for study." (7) In this type of research, the researcher does not attempt to manipulate variables because the context might not permit it. The researcher accepts the situation as it is -- and does not try to prove cause and effect relationships among variables. Descriptive case studies are inductive in nature, because it is impossible for the researcher to identify all of the variables prior to beginning the study (Merriam, 1991). That is to say, understanding of the context emerges as the study is underway, and important research questions begin to form as one learns more about the case.

In this study, the researcher believed it would be difficult to isolate variables from the unique attributes of the rural contexts of schools. Each setting had variables that were too embedded within the context for them to be cleanly extracted. As examples, were science students' scores higher or lower on pre-tests and post-tests because of variables introduced by different teachers? Or were test scores different because of laboratory partners, attitudes toward homework, or extra-curricular activities? Perhaps scores were different because of the time of the day or because of preconceived notions about science classes or agricultural classes? Perhaps science students had different predispositions toward standardized tests as compared to agriculture students?

This project involved the doings of four rural schools. And it brought into account not a singular interpretation of what was occurring at these schools, but instead it involved the multiple realities of various constituents who were connected to the schools in one fashion or another. Given these multiple interpretations, one cannot make sweeping generalizations concerning cause and effect outcomes that might be directly attributed to the intervention associated with this project. There were too many variables that influenced the teaching and learning transactions in this rural education context. However, knowing as much as we can about the context helps us to make sense of the situations and occurrences.

Administration of Longitudinal Study of American Youth Instruments

Content and attitude tests were used with project students. These instruments were used to provide project personnel with a general idea of student skill in and attitudes toward science. The instruments were selected from materials developed by the Longitudinal Study of American Youth (LSAY). Data were primarily used for planning purposes among project personnel. Instruments were administered to 52 participants, with a gender break-down of 39 males and 13 females. There were 9 sophomores, 19 juniors, and 24 seniors who completed the instruments.

As explained in the LSAY Code-book, the intent of the science test is to measure the development in skill in cognitive processing related to science. The LSAY used items developed by the National Assessment of Educational Progress to measure four science related skills:

1. Knowledge of science
2. Application/utilization of science knowledge
3. Integration of science knowledge
4. Implications of science for society.

As explained in the LSAY Code-book, *Knowledge of science* deals primarily with factual material and is dependent on the ability to recall specific facts, concepts, and principles. *Application/utilization of science* involves the ability to combine factual knowledge with rules and formulas to solve a specified problem or answer a specific question. *Integration of science knowledge* refers to the ability to organize information more generally for problem solving, often involving use of scientific concepts and principles, drawing proper conclusions, and employing higher-order thinking skill in reaching a solution to a problem. *Implications of science for society* deals with the understanding of societal level applications of science and familiarity with scientific technology that one might encounter in discussions of societal issues.

Four questions on the test asked the students to provide their personal opinions regarding the test. These questions and student responses are listed below. They provide insight regarding the feelings of respondents regarding the difficulty of the test and the amount of work it required.

How much of this material on this test has been taught in your classes? Over 36 percent of the students thought most of the material on this test had been covered in their classes.

How difficult was this test? Over 55 percent of the students thought that the test was difficult, and over 28 percent of the students thought that the test was easy.

How well did you think that you did? Over 55 percent of the students thought that they had done well on the test, and over 28 percent of the students thought that they had done poorly on the test.

How hard did you work? Over 46 percent of the students stated that they had worked pretty hard on the test, and over 38 percent of the students stated that they had not worked very hard on the test.

Personal Interviews as Data Collection Methods

Interviews were conducted with teachers, counselors, and principals in their home schools. In each case, the participants responded to the protocol of questions that was developed by the researcher. These field research interviews were important data collection activities. The interviews provided insights about how the intervention was perceived by the practitioners in light of the unique characteristics of their home school. As a data collection method, the field research interview is a dynamic, non-linear process that requires active listening and empathetic interpersonal skills on the part of the researcher (Mason, 1993). The interviews allowed the participants to speak freely about their perceptions of the intervention, and they cited some of their trials and tribulations as they experimented with it.

Focus groups as Data Collection Methods

A focus group was conducted with all of the teachers at a central location (the vocational school). Focus groups were also used to collect student data at their home schools. As a data collection method, the focus group allowed the researcher to pose open-ended questions to the group and establish a dialogue among the participants. Greenbaum identified four ways that focus groups are different from traditional interviews: multiple respondents participate, participants interact, a moderator is present, and an outline or protocol of questions is used (cited in Herndon, 1993). An important aspect of the focus group method as a data collection device is the interaction that must be achieved with and within the group. The interaction allows insights and data to develop about the intervention that would otherwise not emerge. The intent of the focus group is to create a synergistic effect that can produce data that would not evolve from the highly structured nature of traditional interviews. Focus groups offer a unique vantage point from which to study the collective perspectives and experiences of participants who are engaged in an intervention.

Comments on the Emergent Themes

Content analysis, a method applied in this study, can be used to make valid inferences about the text of transcription. Content analysis allows the researcher to create classifications for data and help organize the data into useful arrangements. Given the nature of this study, broad categories were generated and coding schemes were developed and applied manually on the basis of conceptual issues. The researcher worked closely with two representatives of the area vocational school during the data analysis phase. An external reviewer examined the sorting process and conferred with the researcher on discrepancies. Transcripts of individual interviews and focus groups yielded data that were rich with patterns that could be traced to the dynamics of the intervention in a rural context. A discussion of study findings is presented in the following narrative.

Meshing Disparate Fields of Study

Bringing together disparate fields of study was both challenging and rewarding to teachers and students who were involved in this project. Preservice programs for these agriculture and science teachers were considerably different. When these two types of teachers were brought together as part of a team teaching assignment, their different methods of practice became evident to both teachers and students. These differences appeared to be pronounced as a function of the rural context. For the most part, the teachers accepted this as a positive challenge -- they learned from each other, they observed each other in action, and they borrowed teaching tactics from each other. Generally speaking, the agriculture teachers refined the laboratory reporting that was required from students and they integrated scientific methods with their instruction. The agriculture teachers gained a greater appreciation of structure from the science teachers. Generally speaking, the science teachers gained an increased appreciation for authentic learning that can be gained from work-based learning and community-based projects. They also learned how to be more flexible in their teaching as a result of working with the agriculture teachers.

Adapting to Team Teaching by Participating Students

Just as team teaching was new to most of the teachers who were involved in this project, it was also a new experience for most of the students in these rural schools. Students had to adapt to the notion of having two teachers in the classroom. Many of the students were accustomed to either an agriculture teacher or a science teacher. Students had to adapt to the styles of teachers who represented both the fields of agriculture and science. Students had preconceived notions of the instruction that they were about to receive, based on whether they had been an "agriculture student" or a "science student" within the context of the rural school. These preconceived notions effected student performance in the classroom. Students commented that they entered the class thinking it was going to be a traditional science or agriculture class, only to find out that the course was structured quite differently from their expectations. Generally speaking, the "science students" had to adapt to the outdoor and hands-on activities, and the "agriculture students" had to adapt to the theory-based "book work" associated with the science content.

The Need for Shared Planning Time

Communication among teachers was critical in this project that featured curriculum integration. It was clear to the students if the teachers were not "on the same page" in the classroom. Probably the most critical element of communication for participating teachers in the rural context was having the time to get together for planning instruction. Rural teachers wear many hats -- including a variety of extra-curricular assignments. If the time is available, they can begin to understand each others' teaching idiosyncracies. Shared planning time reduces the number of misunderstandings and mis-communications that can happen in a team teaching assignment. This issue was prevalent in the discussions with teachers throughout the duration of the project.

Increasing the Access to "Different" Fields of Study

An interesting benefit of this project was the "mixing" of students across ability levels and disciplines. In rural schools, teachers in certain disciplines can be assigned the same students over and over again. A teacher in a rural school -- even with a very small enrollment -- might never have a student in his/her class because the student does not take classes in that discipline. This project increased access to disciplines that students heretofore had not experienced. This project increased the access for students to receive both agriculture and science instruction. This allowed traditional science students to receive hands-on instruction related to science concepts, and it allowed traditional agriculture students to advance their academic skills in taking notes and writing laboratory reports.

Authentic Curriculum and Instruction

The project curriculum was considered to be a strength of this project. The teachers viewed the curriculum as being ill-structured, vague, and ambiguous. It was considerably different from the traditional, well-defined science text-books and their accompanying work-books. However, the types of problem solving that students are apt to perform in the work-place will most likely not be well-defined and clearly articulated. The work-place is full of messy, ill-structured problems that will be the real test of workforce preparation. The variety of activities of the project curriculum was appreciated by the students, and the activities were often meshed with problems, needs, and environments of the rural communities. Among the four participating schools, there were opportunities for students to learn about concepts with books, technology in the laboratory, greenhouses on-site, and off-campus learning situations.

The Problems of Course Scheduling in a Rural School

Scheduling in rural schools is a major problem. The availability of classes for students had varying effects on the enrollments in the project classes at the different sites. In some instances, students enrolled in the project class because there were no other options available to them. This problem seemed to be especially prevalent in schools that were on eight block schedules. In other cases, students could not get into the project class because it was scheduled at a time that conflicted with required courses. For example, if the school only had two sections of World History, then the school schedule needed to accommodate those courses. Enrollments in the classes should not be gauged as a simple indicator of whether the class was popular or not among students. In some cases, the constraints of rural school programming limited the enrollments in this elective course. A variety of factors influenced the enrollments, such as: (1) the size of the preceding year's class, (2) popularity of the teachers, (3) length of the class period, and (4) the general perception of the class by other school personnel and students. Some teachers suggested that upper limits should be considered for class size. Equipment, lab space, and the nature of experiments made it difficult for teachers to handle large enrollments in the class.

Which Students Can Most Benefit From This Type of Instruction?

A significant issue with this program pertained to the type of student who might benefit from this type of instruction. It was noted that the results of the science tests administered in this project showed a significant decline in 1997 as compared to 1996. Although many variables may have effected this decline, interview data strongly suggested that the academic skills of 1996 students were considerably stronger than 1997 students. Counselors, teachers, principals and even students alluded to this issue. It appeared that the rigor of this curriculum was not a good match for students with weak academic skills. On the other hand, average ability students who flourished in applied instruction seemed to perform very well in this program. Teachers expressed an interest in being able to

interview students prior to their admission to the program. In addition, teachers expressed the importance of certain prerequisite courses that should be met prior to a student's admission. These issues are intertwined with the scheduling issues that were outlined in the preceding section.

Putting Knowledge to Work

An important outcome of this project was the understanding that students gained regarding the relationship between the disciplines of agriculture and science. The project students were able to experiment with practical applications (through agricultural instruction) of science concepts that provided additional meaning to them. Teachers used authentic teaching and learning activities, such as shadowing experiences, field trips, work-based learning opportunities, community development activities, and other extensions of the classroom. This practice was highlighted in fiscal year 1996 and it continued through 1997. Students liked opportunities to put their knowledge to work for a greater cause than merely getting a grade. Students at all sites expressed their excitement about the outdoor education activity in which they were able to work as teams with students from the other sites. They had a great deal of fun learning together and they developed a great respect for the power of teamwork. Although rural schools might be short on human and fiscal resources, it seems that their closer relationship with community can make authentic instruction within reach of innovative teachers.

The Fit of Team Teaching in a Rural School

Issues regarding team teaching were just as prevalent in 1997 as they were in 1996. The issues varied according to the school sites and the teachers who were involved. In some instances the teachers seemed to have a synergistic effect on each other's teaching, and in other cases the complexities of the team teaching dynamics actually hindered instruction. The following factors influenced team teaching relationships: teaching styles, levels of content expertise, years of teaching experience, emphasis on one content area over the other, discipline issues, and personality types. As one principal stated, staff development and ample practice opportunities were needed to bring out the best of the team teaching model. Within this case study, is was doubtful whether human and fiscal resources were sufficient to serve these needs. Rural teachers are used to working independently in the privacy of their own classrooms. Teaching dynamics were quite different when these rural teachers were paired together to deliver a team-taught lesson. On a positive note, several teachers stated that the relationships formed between the agriculture and science teachers would continue to have a positive effect on this program.

Concluding Comments and Implications for the Field

The purpose of this paper was to examine a workforce preparation intervention that took place in a rural school context. Workforce preparation is an important part of the overall human resource development agenda of the United States. However, workforce preparation in rural schools has not received much attention from scholars and researchers. As previously noted, federal and state research agendas have tended to slight the unique characteristics of rural schools. In many instances, educational innovations that have emerged from legislative actions have been designed and targeted toward urban and suburban schools. Minimal consideration has been given to the close alignment of community and school in rural contexts.

This study noted that a specific workforce preparation intervention was entangled in the myriad contextual issues of the participating rural schools and communities. The dynamics of the rural context effected the planning and delivery of instruction, scheduling of classes, enrollment of students, and other factors. Planning, implementing and evaluating curriculum integration interventions in rural contexts cannot be activities that isolate the intervention from the larger realm of community.

In the future, researchers would be wise to consider rural, urban or suburban as research variables that merit attention in project design. One size glove does not fit all hands. Research designs and intervention strategies need to focus on the unique aspects of the context and how they might be woven into the planning fabric.

References

DeYoung, A. J. (1987). The status of rural education research: An integrated review and commentary. Rural Education Review, 57(2), 123-148.

Federal Interagency Committee on Education. (1991). An agenda for research and development on rural education. Journal of Research in Rural Education, 7(2), 89-92.

Herndon, S. (1993). Using focus group interviews for preliminary investigation. In S. Herndon & G. Kreps (Eds.), Qualitative Research: Applications in Organizational Communication (pp. 39-45). Cresskill, NJ: Hampton Press.

Mason, S. (1993). Communication processes in the field research interview setting. In S. Herndon & G. Kreps (Eds.), Qualitative Research: Applications in Organizational Communication (pp. 29-38). Cresskill, NJ: Hampton Press.

Merriam, S. (1991). Case Study Research in Education. San Francisco: Jossey-Bass.

Miller, J., Hoffer, T., Brown, K., & Nelson, C. (1992). LSAY Codebook: Student, Parent, and Teacher Data for Cohort One for Longitudinal Years One Through Four (1987-1991). DeKalb, IL: Northern IllinoisUniversity.

Orr, M. T. (1998). Integrating secondary schools and community colleges through school-to-work transition and educational reform. The Journal of Vocational Education Research, 23(2), 93-113.

Roth, G. L. (1996). Tech prep in the rural context. The Journal of Vocational and Technical Education, 12(2), 1-12.

Stasz, C., & Kaganoff, T. (1998). Learning how to learn at work. center*focus*. Berkeley, CA: National Center for Research in Vocational Education.

Human Resource Related Characteristics in Selected Small Manufacturing Companies in Mexico

William R. Venable
Oklahoma State University

The author interviewed executives from 31 selected small manufacturing companies in Mexico for the purpose of identifying, among other things, their perceptions of human resource related characteristics in their organizations. Analysis of the transcripts and observations of the workersled to conclusions. Human resource programs focus on employee relations more than on employee development. Training activities target personal more than skill development. Workers are treated as an expense more than a resource worthy of investment. High performance work practices are rare.

Keywords: Human Resource Problems, High Performance Work Practices, Mexico

This is a descriptive study about the human resource related characteristics of Mexican small manufacturing companies. It is an exploratory survey conducted through structured face-to-face interviews which were audiotaped, transcribed, translated, and analyzed. The survey is a preliminary step for a research project which hopes to contribute to the identification of appropriate interventions for enhancing high performance work practices in small companies which conduct business internationally.

The research problem is that, while small companies comprise almost all of the Mexican economy, and most of them manufacture products, many for exportation, there is little reliable information available about their human resource characteristics.

The data previously available are incomplete. They have been collected from some companies but not from others. They are inconsistent. That is, some data sets actually contradict what others say about the same companies. They are non comparable in that they have been collected in so many ways and by such varying categories that they cannot be directly compared. Many of these data have been collected by government or quasi-governmental agencies which are perceived to seek justification for increasing taxation, and may thereby be unreliable. And finally, relatively few data have been broadly accumulated about small manufacturing companies.

Overview of the Literature

There is substantial literature related to high performance work practices in the US. The future of competitiveness for the US company is related to how well its workers are trained, hoiw flexible and adaptable they are, and whether it is a high performance workplace. (Potter & Youngman, 1995). America's management paradigm has shifted to provide employees greater opportunity to influence the outcomes of work organizations. Through changes in the design of work and a renewed emphasis on the importance of training and development, selective staffing, compensation, and information sharing, management has begun to realize the effect workers can have on the attainment of organizational goals (Levine, 1995).

High performance work practices assist people to involve themselves in the decision making and problem solving processes of their work activities. Based on an analysis of previous research, some of the most frequently implemented high performance work practices are quality circles, work teams, job rotation, total quality management, crosstraining, employee committees, training and development, selective staffing, compensation, and information sharing (Youndt, Snell, Dean & Lepak, 1996; Marlow, 1998).

By allowing workers to influence their work activities, organizations can take competitive advantage of the human element. Creating high performance work environments which fulfill human, social, and psychological needs allows organizations to reap the benefits of increased productivity, product quality innovation, and flexibility (Schutz, 1994; Mirvis, 1993; Marlow, 1998.)

Small businesses have always comprised the vast preponderance of the economy in Mexico and, for that matter, throughout the rest of the hemisphere to the south and in most of the rest of the world. According to several

Copyright © 1999 William R. Venable

agencies which provide Mexican government mandated management development and employee training programs. small companies employed more than 95% of the workforce in 1997.

The government mandated training programs are by subscription. This means that the companies which earn the most money and employ the greatest number of employees are required to pay for and participate in the programs while the smaller ones are left out. This makes it difficult to estimate the potential for targeted training and development programs for management and for employees.

Purpose of the Study

The purpose of the study is to identify perceptions of selected small manufacturing executives about human resource related characteristics in their companies in the State of Puebla, Mexico.

Research Questions

What are the perceptions of selected Mexican small manufacturing executives about human resource related characteristics in their companies?
What are the perceptions of these executives about the future development of human resources in their companies?

Research Methodology

The methodology for the study was the conduct and qualitative analysis of interviews with top managers of small Mexican manufacturing companies which export. Transcripts of the interviews were reviewed and analyzed cognitively. Qualities of similarity, range of participant sources, and clarity of themes, thoughts and phrases were identified, sorted, and compared.

The CatPac textual analysis software package from TerraResearch was implemented for the purpose of evaluating several of the most disparate transcripts for frequency and proximity of words. Textual analysis involves three basic steps:

1) word count and creation of a table of correlations between words;
2) investigation of word clusters with high correlation to identify interest or significance; and
3) graphic presentation or mapping of word clusters of interest or significance.

While the word clusters sometimes reveal items for subgroup comparison or for traditional cognitive analysis, in this case no particular differences emerged beyond what could be extracted with cognitive analysis.

Interview Guide

A formal interview guide was developed from the feedback of ten subject matter experts in Mexico. These experts were Mexican economists, academics, consultants, writers, and business leaders who were experienced with small Mexican manufacturing companies which export products.The guide consisted of demographic, descriptive, and perceptual questions about respondent companies in the areas of demographics, human resources, organization, exportation, NAFTA, the future, and success.

Selection of Manufacturing Companies

Interviews were conducted with one executive from each of 31 approximately 50-500 employee-based manufacturing companies, or similar sized divisions of larger companies, which exported products. Purposive and snowball sampling were used to identify participating companies. A research decision was made to purposively collect data from companies identified as "apparently successful" by executives of other companies. Snowball sampling was chosen as the only way to get access to these executives, since a referral from a professional peer is often a prerequisite to entry for a data collector in Mexico.

"Apparent success" was deliberately left undefined in order to facilitate the identification of a sample selected by reputation among peers. Since there were no data available from which to identify a population of

successful companies by measurable criteria, it was determined that, while biased, selection by perceived reputation was likely to yield more subjects functioning at higher levels than selection with no criteria.

Initially, a few "apparently successful" companies were identified by officials at the Mexican university sponsoring this study whose owners or top managers were also board members, benefactors,or alumni of the university. These respondents were then asked to identify executives of other small exporting companies which they believed to be successful and who could be contacted with a referral from them. Those most frequently identified were invited to participate in the study.

Additional respondents would have been otherwise difficult to identify due to the frequent incompleteness, inconsistency, non comparability, and unreliability of statistics about companies in Mexico. They would have also been unlikely to participate due to their desire to hide or understate their "apparent success" for fear of being targeted by the government or by either industrial or common thieves.

A wide range of industries representative of the manufacturing sector in Puebla and central Mexico was incorporated into the interviews. These included rustic furniture (6); ceramics (2); clothing (7); marble and stone (2); plastic products (3); mechanical parts and appliances (2); snack foods (3); industrial chemical processes (2); and textiles (4).

Procedures

Interviews were carried out by one interviewer and one recorder who audiotaped each interview with two mini cassette recorders and took written notes of verbal and nonverbal responses by interviewees. The interviewer and recorder discussed and compared their impressions of each interview at its conclusion. Each interview was followed by a tour of the facility which included an observation of production processes and of worker performance and interactions.

Audiotapes were transcribed verbatim on disc and hard copy by a transcriptionist who was trained by the interviewer to attend to the idiosyncratic aspects of these particular interviews. Transcripts were reviewed and checked against notes, and corrected with the audiotape where indicated. The interviewer was American and the recorder and transcriptionist were both Mexican. All transactions were conducted in Spanish.

Transcripts were translated into English with the use of the software program Globalink Power Translator Pro v6.2. The translation was reviewed and corrected by the interviewer, and found to be sorely lacking. The transcripts were comprised of informal, colloquial, Mexican Spanish, much of which is expressed more as a series of idioms than of words. The translator used the Barcelona engine, which was developed for the European Economic Community, and translated decontextualized words rather than expressions. For example, it translated "materia prima", or raw materials, as "cousin means". While "prima" can mean female first cousin as well as prime or raw, the former obviously has no meaning in this context, and the more literal meanings of both words were discarded by the translator. In the end, the interviewer relied primarily upon the original Spanish transcripts and his own fluency in the language.

Results

Some of the companies had designated a specific area of human resources, but many did not. Where the specific area was designated, it was usually focused more upon the maintenance duties related to hiring, payroll, and absenteeism than it was directed to high performance work practices.

Where there was an administrator of human resources, such a person usually wore several organizational "hats", and human resources was often not considered to be the most important of these. The human resource administrator was sometimes the chief accountant, the director of operations, the bookkeeper, or even the owner of the company. In the larger of these firms it was sometimes a director of public relations or an ombudsperson responsible for negotiating with the unions and/or resolving employee disputes.

Most directors of human resources had no formal education in the field. Some had degrees in general management or engineering or accounting. Several had participated in short term training programs related to human resources. A few were former teachers or professors. One plastics manufacturing person had previously been an organization development consultant. The range of competence and insight from this person to others who were essentially administrative assistants with no higher education was dramatic.

The majority of companies carried out their responsibilities for human resources in a manner focused more upon short term survival than upon continuous improvement or development. Most companies were more concerned

about ensuring that enough enmployees appeared for work each day so that the plant could meet its production quotas than they were about increasing employee effectiveness.

There appeared to be a strong paternal relationship between managers and workers in most companies. Salaries and benefits were usually not far above the minimum legal standards in Mexico, approximately ten percent or less of that in the US. This "hand to mouth" condition left many workers dependent upon the good graces of their employer as the sole recourse for financial assistance through crises. So human resource directors were often charged with caring for valued employees who had special medical problems or legal predicaments. Employees were often encouraged to bring their personal problems which were affecting their work performance to the attention of the human resource person, who would sometimes attempt to intervene in their behalf.

Programs and activities related to human resources tended toward company sponsored parties on special occasions like national and/or religious holidays; periodic meetings with motivational speeches made by managers or invited presenters; field trips to recreational or cultural centers; and the posting or sponsorship of educational or personal development programs provided by other agencies in other locations after work hours. One exception to this pattern was the strong desire by several plants to meet the requirements of ISO-9000 in order to qualify for exportation into international markets, particularly in Europe.

Formal programs directed to the development of specific work related skills were less common. In a marble and stone company the top managers provided direct training to the workers. Many were taught to operate two machines simultaneously which had previously each been operated by one person. This job redesign training was provided for workers who volunteered and were selected. They were rewarded with an approximately 50% increase in salary. Most of these workers were also crosstrained on other machinery. The plant manager in this case was an industrial engineer who had received additional training in the US.

In response to questions about the effects of human resource programs upon the employees and the company's "bottom line", the executives talked about increased motivation to work and greater loyalty. A few said that the workers were more knowledgable about their work or about the organization. The director of a plastics factory, who said that he was studying philosophy and humanities in the evening to broaden his education beyond his management degree, provided reimbursement for the costs of formal education of any kind for his employees, without concern about whether it was work related.

Regarding future plans for human resources, most indicated that they would continue with what they were doing or that they would like to do more of the same. Very few spoke about striving for a new or different human resource function from what they currently had.

Some high performance work practices were observed, although few seemed to be implemented beyond a rudimentary level. Quality circles were not formally implemented. Work teams were present in some of the assembly plants, particularly in ceramics, clothing, and appliance manufacture. Some teams met weekly or daily to address issues of efficiency or specific assembly problems. Job rotation was present in several companies on a limited basis, as was crosstraining. There were few formal employee committees. Information sharing was conducted formally in a few organizations, but in most the financial data were held very closely within management.

Staffing was not done selectively in most cases. Many companies seemed desperate to find enough workers who could learn quickly and who would come regularly to work. A few plants had instituted a formal probationary period to precede year round employment, as they would often dismiss workers when the demand for their products was reduced by seasonal or other variations in the market.

Compensation ranged from minimum wage to from two to four times minimum wage, depending upon the perceived need for a stable workforce and the value to the company of skilled or trained employees. A form of profit sharing was present in a few plants where management indicated that it had affected production in a positive way. Medical benefits varied from none to very moderate. Most workers were relegated to services in the state run social security hospitals. Retirement benefits were required by the government but were quite modest. Other benefits not required by the government were rare.

Training and development for workers was mostly of the "on the job" variety. Workers were assigned as assistants of more knowledgable employees until they were recognized as able to function independently. Some plants encouraged workers to attend school on their own time, and a few had made specific arrangements for transportation to basic literacy programs. Managers were sometimes reimbursed for higher education expenses, and many of the top managers participated in management development seminars in Mexico and in the US.

Conclusions

There is an expression in Mexico that a successful company is one which is still in business after the peso devaluation and the continuing decline of its value as it floats against the dollar. (Its value depreciated from 3.5 to the dollar to six on December 14, 1994, and has continued to decline to its current value of approximately 10.5 to the dollar in January, 1999.) In this context, these organizations may be called successful because they are survivors rather than because of human resource programs or activities.

The role of human resources is most often seen as encompassing employee relations and personnel accounting functions rather than implementing high performance work practices. The failure to recognize the importance of employee development to global competitiveness will lead to serious problems as Mexican companies are challenged by plants in Asia and Africa where the labor force costs a smaller fraction of Mexican costs than Mexico's currently are of the US.

Many executives are familiar with current American and Western European management concepts and terminology. They profess an enlightened philosophy about planning and employee involvement, and human resource development. Many describe their ethical or religious obligations to help their workers and society as well as the company. But there is a gap between the positions taken and the extent to which they have committed resources.

Paternalism in the workplace competes with employee development and restricts its implementation. Treatment of workers as unfortunate, ignorant, or childlike does not usually lead to confidence in the value of investing in increasing their capacities to contribute to the organization.

Most of these companies are family owned and operated, in which most of the decision making is reserved for family members and their spouses. There is often an unspoken expectation of conformity with tradition and the status quo, and new ideas are sometimes looked upon with suspicion. Renewal and responsiveness to changing market conditions become more difficult to carry out, and competitive advantage is harder to acquire.

The emphasis of human resource programs upon recreational and caretaking activities more than developmental ones, and upon general more than skill based training, compromises the potential for improving worker productivity through human resource development. Examples include a company promoting the study of English as a second language by employees whose work skills have not been assessed, and another focused upon ISO-9000 certification without having done a cost benefit analysis of such an effort.Resulting disillusionment could lead to a further reduction in, or abandonment of, more focused and effective investment in their people.

Recommendations

Most of these companies, particularly the family owned ones, can benefit from opening themselves to fresh perspectives from new people. Many of them are physically hidden like military forts within their own communities. Executives guard their techniques and processes with great care from their competitiors. They could profit from recognizing the value of continuous renewal and innovation to competitiveness within Mexico and globally.

The tradition of paternalism should gradually give way to partnership with the employees. In the human resource programs, this would suggest movement from emphasis on caretaking activities like parties, motivational speeches, and arbitrary interventions for personal problems reserved for the most loyal workers, to employee involvement programs and a system of profit sharing reflected in compensation and benefits.

Training and development activities should be based upon formal planning and need assessment at the organizational, team, and individual levels.They should then be directed to the performance and productivity goals of the company, and emphasize pertinent knowledge and skill development.

High performance work activities should be considered for and adapted to the needs of each organization. Those with particular potential for improving human performance in these companies are selective staffing, information sharing, crosstraining, self managed work teams, employee committees, profit sharing compensation, and training and development.

References

Levine, D.I. (1995). *Reinventing the workplace: How business and employees can both win.* Washington, D.C.: The Brookings Institution.

Marlow, R. (1998). *High performance work practices in small manufacturing and processing Organizations which export.* Unpublished Master's Thesis, Oklahoma State University.

Mirvis, P.H. *Building the competitive workforce: Investing in human capital for corporate success.*New York: John Wiley & Sons, Inc.

Potter, E. & Youngman, J. (1995). *Keeping America competitive: Employment policies for the Twenty-First Century.* Lakewood, CO: Glenbridge Publishing, Ltd.

Schutz, W. (1994). *The human element: Productivity, self-esteem and the bottom line.* San Francisco: Jossey-Bass Publishers.

Youndt, M., Snell, S., Dean, J., Jr., & Lepak, D. (1996). Human resource management, manufacturing strategy, and firm performance. *Academy of Management Journal* 39(4), 836-866.

BEST COPY AVAILABLE